United States Department of Agriculture **Forest Service** **Humboldt-Toiyabe National Forest** **1200 Franklin Way Sparks, NV 89431 775-331-6444**

Autecology Phase IV – Butterfly Habitat Protection and Restoration Project

Project Number 57659

Spring Mountains National Recreation Area
Humboldt-Toiyabe National Forest

Purpose and Needs Statement
and
Purposed Action

February 24, 2020

Introduction and Background
The Spring Mountains National Recreation Area (SMNRA) of the Humboldt-Toiyabe National Forest is beginning the environmental analysis process for the Autecology Phase IV – Butterfly Habitat Protection and Restoration Project within the Upper Wheeler Wash and the Willow Creek Watershed (Figure 1). The objective of this project is to protect known occupied habitat and expand and connect potential habitat for two species of butterfly's endemic to the SMNRA.

The Spring Mountains ecosystem is a 'sky island' of montane endemism isolated from similar mountain ranges by low elevation deserts that serve as barriers to migrations of cooler and more mesic-adapted plant and animal species. The SMNRA currently hosts 23 to25 endemic flora and fauna found nowhere else in the world. Of those endemic fauna, the Spring Mountains acastus checkerspot butterfly (*Chlosyne acastus robusta*), and the Spring Mountains dark blue butterfly (*Euphilotes ancilla purpura* and *E. a. cryptica*)] were petitioned for listing under the Endangered Species Act in 2011. The US Fish and Wildlife Service found the Spring Mountains dark blue petition contained sufficient scientific evidence and has placed the species on their docket for 12-month review.

The butterflies have previously been petitioned for federal protection in a 12-month review of the Spring Mountains acastus checkerspot and Spring Mountains dark blue butterfly in in 2012. Both species are included on the Region 4 Sensitive Species List, and guidance from the Toiyabe National Forest Plan and the SMNRA General Management Plan (GMP) provide standards and guidelines for conserving and improving sensitive species habitat.

Location
The project will occur in the Upper Wheeler wash (36°18'37.15" N 115°49'22.37" W) and Willow Creek Watershed (36°24'09.49" N 115°44'43.53" W), located in Clark County, 30 miles Northwest of Las Vegas, Nevada (Figures 2 and 3).

Purpose and Need for Action
There is a need to protect and expand habitat for endemic Regionally Sensitive butterfly species on the SMNRA. Habitat of the Spring Mountains dark blue butterfly and Spring Mountains acastus checkerspot were found to be at risk from fire during recent condition surveys. In some areas the high volume of ladder fuels along with canopy closure puts the habitat at a higher risk of loss as a result of fire. In areas where there is an increased risk of loss of habitat due to high severity fire there is a need to remove excessive fuels and open the canopy to improve habitat conditions. The purpose of the proposed action is to protect existing habitat and expand potential habitat of Forest Service Regionally sensitive butterfly species by implementing restoration projects and vegetation reduction within portions of Upper Wheeler and Willow Creek watersheds.

Project Purpose
The purpose of the Butterfly Habitat Protection and Restoration Project is:

1. To improve, connect, and augment habitat of two Region 4 Sensitive butterfly species, and

2. To protect existing butterfly habitat by reducing the threat of high severity wildfire.

Proposed action
Methods of restoration and habitat improvement may include out-planting of butterfly larval host and nectar plants, decommission and restoration of unauthorized motorized routes fragmenting habitat, and vegetation reduction techniques that may include mastication, hand thin and piling, and broadcast, pile or understory burning to decrease vegetation in the dense pinyon-juniper community. Proposed habitat enhancement, restoration, and augmentation treatment prescriptions come directly from the Butterfly Autecology Phase III (SNPLMA Round 14) and are a product of the best available science from the

species experts.

Proposed Methods for Habitat Restoration

- Seed collection and out-planting of larval host and nectar plants;
- Restoration of illegal off-highway vehicle use to decrease habitat destruction and

Proposed Treatment Methods for Canopy and Vegetation Reduction

- Prescribed fire by understory burning for the removal of vegetation;
- Hand thin and piling of slash and cut material, and subsequent pile burning;
- Removal of smaller trees with diameters at breast height less than 14 inches to reduce fuel loading and
- Mastication

These proposed treatments are all tools and methods that may be used to meet objectives and are intended to occur only as needed across the analysis area. Multiple treatments may be applied to some areas. Site-specific conditions will determine which treatments to apply in what locations across the project area.

Description of Treatment Methods

The following describes the potential treatments that can be used to implement the proposed action. Any one method may be used in combination with other methods to achieve the desired results.

Prescribed fire - This includes understory burning and, pile burning. Prescribed fire removes existing vegetation via the planned use of low severity fire over part or all of a designated area. Such burning would be done under a Prescribed Fire Burn Plan, which consists of a set of carefully designed limits on burning conditions including maximum and minimum temperature, humidity, wind, and fuel moisture in order to meet a set of pre-determined objectives.

Hand thin and piling - This treatment involves the use of chainsaws and manual hand labor to cut and pile woody material. Cut material would be piled and burned or, if left on the ground, would be understory burned. This method may also be used on sensitive soils or in other areas where equipment use is not recommended due to resource concerns. Piles would vary in size, but generally will be small enough so that adverse soils impacts would not occur.

Mastication - This treatment involves the use of a ground based, excavator or tractor to shred vegetation. Masticated material could be brush, dead trees, excess fuel loading, or other material that is either live or dead. Equipment includes both drum and disc type shredders. Masticated material would be left on to the ground.

Design Elements

The Autecology Phase IV – Habitat Protection and Restoration Project proposed action has been designed to meet the standards and guidelines provided in the 1986 Land and Resource Management Plan, further supplemented by the General Management Plan for the Spring Mountains National Recreation Area. Specific design criteria may be developed to further mitigate impacts of the proposed activities. These criteria will be approved by the responsible official and made part of the final decision.

Management Plan

The Toiyabe National Forest Plan (Forest Plan) and the SMNRA General Management Plan (GMP), an Amendment to the Forest Plan, provides district-wide direction relating to desired conditions, conservation of sensitive wildlife, and forest health and fuels reduction projects that are applicable to this project:

Key Forest-wide Standard and Guidelines with Application to the SMNRA (Forest Plan)

- Manage ecosystems containing sensitive species to maintain or increase populations and achieve recovery.
- Manage habitats to achieve recovery of listed species and ensure that sensitive species do not become threatened or endangered.

Goals in the GMP Related to the Project:

- (0.1) Conserve the health, diversity, integrity, and beauty of the ecosystem.

Objectives in the GMP Related to the Project:

For the GMP Goal 0.1 - Conserve the health, diversity, integrity, and beauty of the ecosystem.

- (0.1) Maintain or enhance ecosystem health, function, sustainability, and diversity (plant, animal, and community).
- (0.3) Return fire, as a historic ecological process, to the SMNRA. Maintain and improve ecosystem function and health through the management of prescribed fire and natural fire occurrence.
- (0.8) Manage for endemic levels of native insects and diseases within the ecosystem.
- 0.10) Increase populations of threatened, endangered, and sensitive species, and species of concern, and their suitable habitat over the long term.
- (0.11) Provide sufficient habitat to support the continued existence of all native resident and migratory species throughout the planning area. Restore desert bighorn sheep to their historic range.

Desired Future Conditions in the GMP Related to the Project:

For the GMP Goal 0.1 - Conserve the health, diversity, integrity, and beauty of the ecosystem.

- Ecosystem health and function are sustained. A mosaic of ecological communities are maintaining plant and animal diversity. All native and desired non-native species have viable populations well distributed throughout the Spring Mountains. Historic disturbances, including fire, continue to operate or are being mimicked to maintain ecosystem health. Plant, animal, and community (combination of plants and animals in an area) diversity is at historic levels. Unique habitats, such as cliffs and caves, are providing habitat for unique species.
- Fire plays an important role in ecosystem function and health. The historic role of fire is mimicked through prescribed burns, fuelwood areas, shaded fuelbreaks, and natural fire occurrence. Fuel loads are at historic levels. Open travel corridors are created for humans and wildlife, while some down woody material is left for other species of animals and plants. Burned areas are rehabilitated either naturally or through active seeding, and form an important link in the early seral stage in that vegetative community. A seed bank of local native species is being used in rehabilitation of burned areas.
- Insects and plant diseases are at endemic levels, help to maintain ecosystem health, and are not threatening private property. Epidemic outbreaks are minimized through the use of risk rating and monitoring, and managing for age and species diversity. Infected trees that do not pose a threat to private property or public safety are providing for small openings in the tree canopy necessary to promote early seral stages and to provide habitat for wildlife. Stand and species management are preferred tools to control insects and disease organisms. Pesticides are only used to avoid and alleviate epidemic outbreaks. A cooperative relationship with NDF helps to keep insects and plant diseases on private property at low levels.

Standards and Guidelines in the GMP Related to the Project:

For the GMP Goal 0.1 - Conserve the health, diversity, integrity, and beauty of the ecosystem

- (0.22) Use prescribed fire, silvicultural and mechanical treatments, and shaded fuelbreaks throughout the SMNRA to achieve ecosystem health goals, reduce fuel loads, and protect public safety, developed areas, and private property. (Guideline)
- (0.26) Use stand management (age and species diversity) to avoid epidemic levels of insects and plant diseases. (Guideline)

Design Criteria

Consevation measures, or design criteria, will be followed prior to and during the implementation of this project to avoid or minimize impacts to resources. Final design criteria will be outlined in the Decision Memo.

Design Criteria	Potential Impact Addressed
Wildlife and Plants	
Education of Implementation Crews: Prior to implementation, crews would meet with qualified biologist on SMNRA staff to coordinate on identification and avoidance of wildlife sensitive species and habitats and notification procedures if TES species are encountered.	Minimize accidental destruction of TES species and degradation of sensitive habitat.
Limited Operating Periods for Migratory Birds and Sensitive Raptors: Thinning activities would not occur between April 20 - July 20 to avoid bird breeding season. If an exception is requested, it may be granted if a nest search is conducted and substrates (i.e., trees, bushes, or ground) on which nests are found are avoided until nestlings fledge. A qualified biologist who is familiar with the birds of southern Nevada and can accurately identify nesting and breeding behaviors would conduct all nest searches. Appropriate buffers would be designated for any nests located based on the species habitat requirements. Raptor nests will receive a 0.5 mile no-disturbance buffer would be centered around the nest from March 1 to August 31, or until a biologist has confirmand that the nestlings have fledged.	Prevent nest abandonment and loss of young for migratory birds and raptors.
Limited Operating Periods for Sensitive Bats: Thinning activities would occur in daylight hours only (i.e. dawn to dusk) and depending on the species and type and status of habitat, seasonal operating limitations may be implemented to protect areas of maternity roosts and winter hibernacula.	Minimize disturbance to foraging bats.
Snags: Retain 60% of naturally occurring snags (or a minimum of 5 per acre). Inspect snags that will be cut for cavities or signs of nesting and nesting. Snags can only be collected/harvested between October and the end of February. Provide downed trees (minimum 12-inch diameter) and small brush piles to provide ground cover for small mammals, amphibians, reptiles and invertebrates.	Minimize degradation of habitat for sensitive raptors, migratory birds, bats and other small mammals, and reptiles Provide ground cover sites for small mammals, amphibians, reptiles, and invertebrates.
Woody debris from mastication would be spread to an average depth of no greater than 3 inches in pinyon-juniper, 4 inches in ponderosa pine, and 7 inches in lodgepole pine and mixed conifer (Fornwalt 2018).	Minimize impacts to sensitive plants and butterfly host plants
Staging Areas: Temporary equipment staging areas will be located within the project boundary and in previously disturbed (e.g., roads, parking) areas.	Minimize loss of individuals and degradation of habitat for sensitive species

Staging areas will avoid known invasive species populations. Vehicles, heavy equipment and off-road UTV's/ATV's will be inspected by a certified equipment inspector or a biologist before entering site.	
Implementation Timing: Timing of mastication and hand thinning will be early fall to early spring (August 1– March 30) when plants are not actively growing and have dispersed their seed. Preferred timing of understory and pile burning will be from fall to spring (September 1-April 20) when soil and climate conditions lower the intensity and reduce the impacts on the vegetation and soil. Preferred locations of piles for pile burning will avoid sensitive species known locations by a 5-meter buffer. A USFS botanist, biologist, or ecologist trained in species identification will provide preferred avoidance areas input and on-site monitoring as needed.	Minimize impacts to larval host and nectar plant species for sensitive butterflies and minimize impacts to sensitive plant species.
Weed Prevention: USFS and Humboldt-Toiyabe NF Best Management Practices (USDA Forest Service 2004) would be employed during project implementation to prevent and control the introduction and spread of invasive species. Inspection of erosion control and road materials, equipment and vehicles would occur prior to contracted work to ensure that they are free of mud and visible plant debris. The materials, equipment, and vehicles would also be cleaned prior to moving from an infested treatment unit to a unit that is free of weeds. A USFS employee trained in vehicle inspection will provide time to inspect all heavy equipment before entering project site to ensure each is free of soil and plant debris. Any new infestations of noxious weeds discovered during implementation would be documented and locations marked on a map or GPS. USFS botanist, biologist, or ecologist will then be consulted on a plan of action according to weed species found.	Minimize the introduction and spread of noxious and invasive species onto and throughout the project area and adjacent federal land
Soils and Hydrology	
Springs: No heavy equipment will be allowed within 50 feet of springs, creeks, and associated riparian areas, as designated by a Forest Service representative. Heavy equipment may reach into these areas with an arm or boom for treatment. Hand crews may lop and scatter and may haul material from inside to a chipper outside the 50 foot area. Avoid pile and burning of slash removal within 50 feet of any perennial springs and streams and 25 feet of intermittent springs and streams. **Streams and Drainages:** Vehicles and equipment will not enter into	

entrenched channels except to cross at designated locations at right angles. The frequency of crossings will be minimized. **Soils:** Motorized equipment, including masticators, will not be used when soils are wet. (A soil is considered wet when it can be molded into a ball that holds together under repeated tosses, OR if the soil can be rolled into a 3 mm thread without breaking or crumbling.)	
Heritage	
The USFS is proposing the following avoidance plan for each of the properties (unevaluated or listed) within the project area: • Flagging to identify properties, site boundary maps would be provided to the fuels project manager, piling cut brush and vegetation at least 30 meters away from the boundaries of each historic property, and on-site monitoring during the fuel treatments. In addition, if any buried and/or previously unidentified resources are located during the project activities, the SHPO recommends that all work near the find cease and the district archaeologist be contacted to evaluate the area per 36 CFR Section 800.13(b)(3).	Reduce potential adverse effects to historic properties.
Recreation and Wilderness	
Recreation: Where possible avoid creating piles within areas that have previously been used for dispersed camping. Camouflaging entry/exit routes for tracked equipment or any ATV/UTVs used in project area to avoid creating future unauthorized motorized routes. **Wilderness/Visuals:** Where possible create a feathered edge near the wilderness boundary as to reduce sharp delineation of the wilderness boundary.	Limit impacts to recreation, scenic value, and wilderness
Public Notification	
All appropriate federal, state, and local agencies, and communities would be notified of any burn activity as per agency standard operating procedures for the implementation of prescribed fire activities.	Reduce public concerns regarding the possibility of wildfire near communities.

Autecology Phase IV: Butterfly Habitat Protection and Restoration Project		
Name	**Responsibility**	**Phone Number**
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Jim Winfery	NEPA Coordinator – IDT Leader mentor	775-355-5308
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Jim Hurja	Soils Scientist	702-515-5407
Nicole Bolton	Hydrologist	775-289-5145
Kelly Turner	Archaeologist – and SHPO Consultation	702-515-5424
Jonathan Stein	Wilderness and Recreation	702-515-5418
Demetrius Purdie-Williams	GIS Analyst	702-839-5564
Josh Thalacker	Fuels Specialist	702-515-5441

Comments received in response to this solicitation, including names and addresses of those who commented will be considered part of the public record for this project, will be available for public inspection, and will be released if requested under the Freedom of Information Act.

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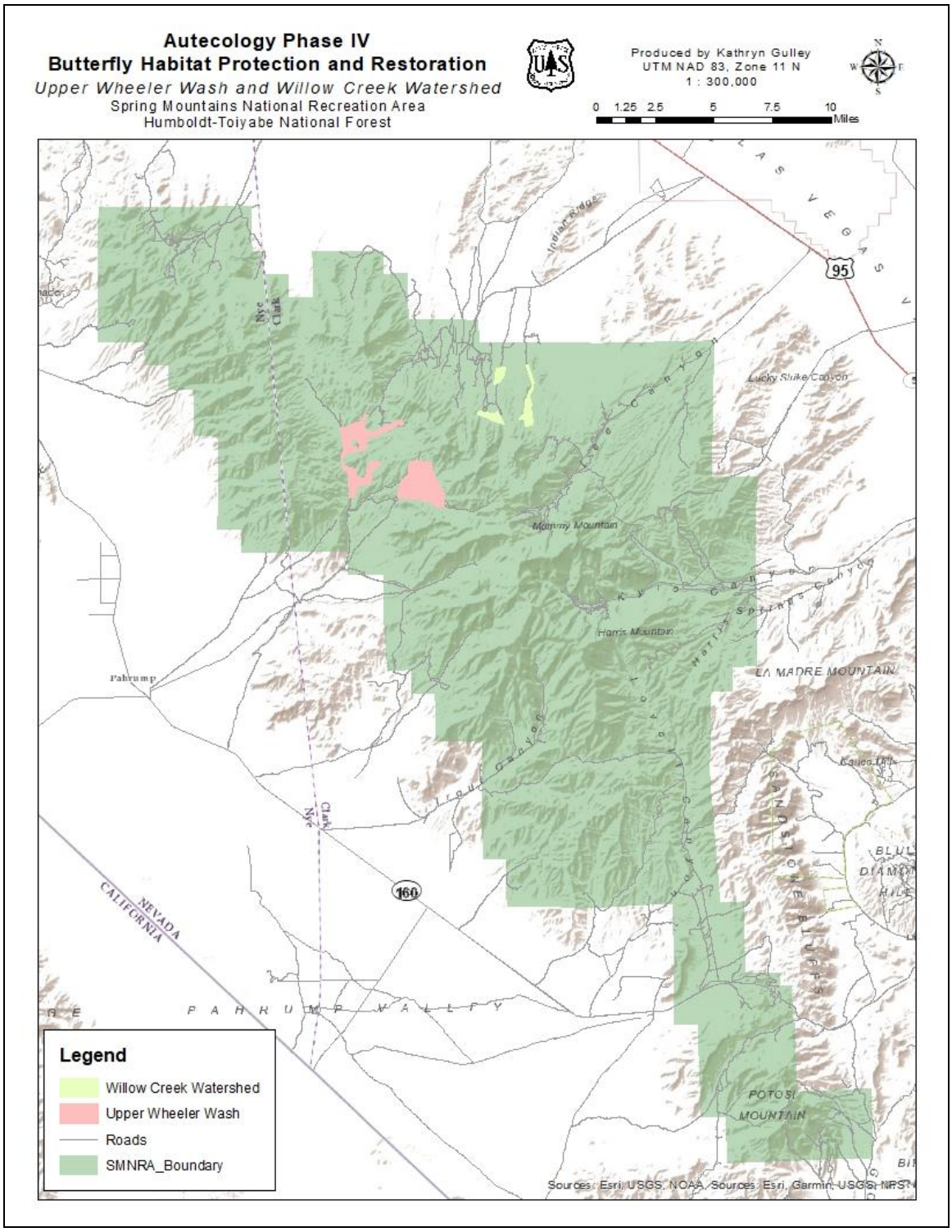

Figure 1: Location overview of the project areas located within the Spring Mountains National Recreation Area, Humboldt-Toiyabe National Forest, Clark County, Nevada.

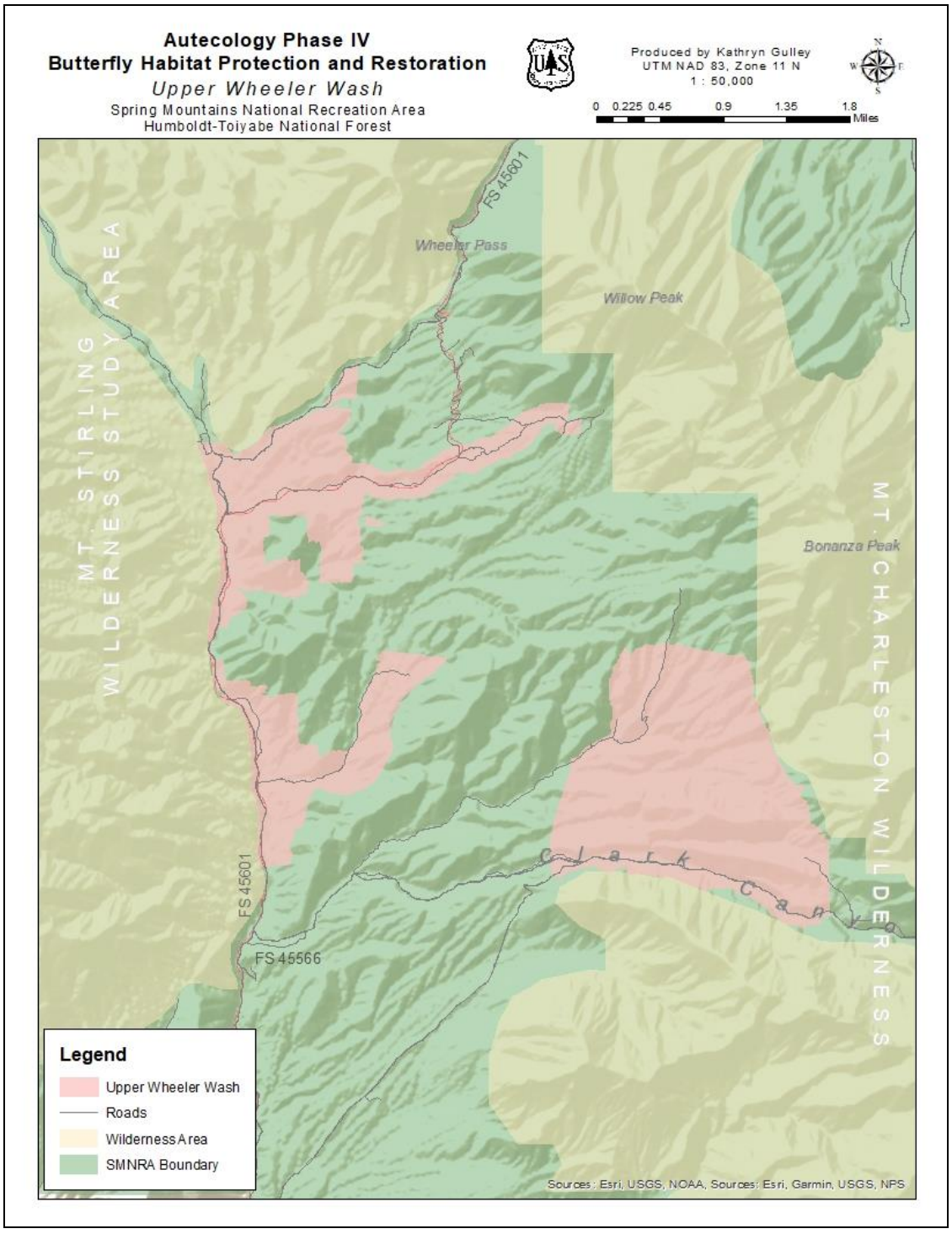

Figure 2: Detailed map of the Upper Wheeler wash project area for the Autecology Phase IV - Butterfly habitat protection and restoration project, within the Spring Mountains National Recreation Area, Humboldt-Toiyabe National Forest, Clark County, Nevada.

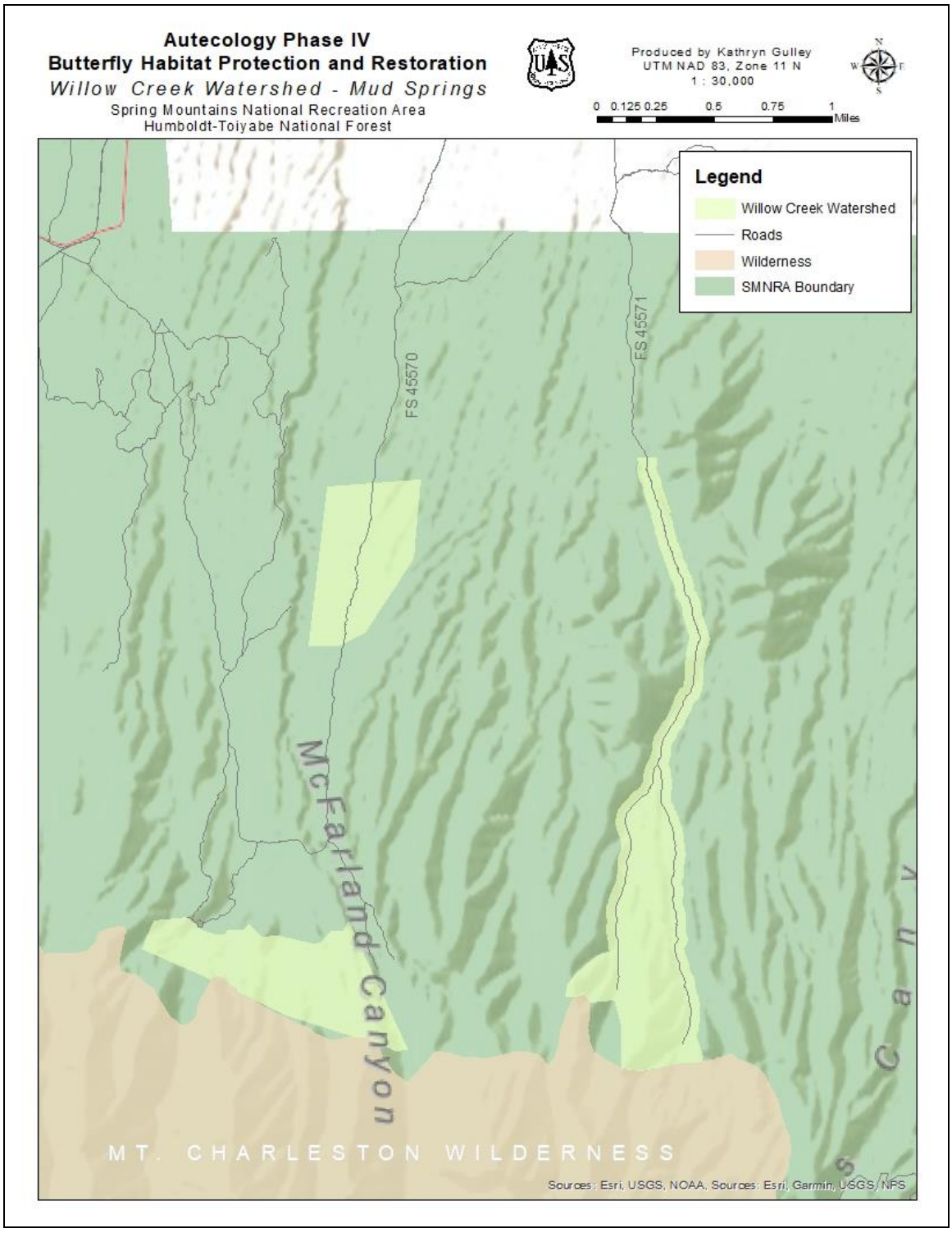

Figure 3: Detailed map of the Willow Creek Watershed project area (Mud Spring) for the Autecology Phase IV - Butterfly habitat protection and restoration project, within the Spring Mountains National Recreation Area, Humboldt-Toiyabe National Forest, Clark County, Nevada.